



# MATERIAL SAFETY DATA SHEET

## 1. Product and Company Identification

**Product identifier** YSI 8591 Bicarbonate Buffer  
**Version #** 01  
**Issue date** 08-October-2014  
**Revision date** -  
**Supersedes date** -  
**CAS #** Mixture  
**Product code** 8591  
**Product use** Analysis Standard/Reagent  
**Manufacturer information** YSI, a Xylem brand  
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## 2. Hazards Identification

**Emergency overview** Exposure to powder or dusts may be irritating to eyes, nose and throat.  
**Potential health effects**  
**Routes of exposure** Inhalation.  
**Eyes** Dust in the eyes will cause irritation.  
**Skin** Dust or powder may irritate the skin.  
**Inhalation** Dust may irritate respiratory system.  
**Ingestion** May cause irritation.  
**Signs and symptoms** Irritation of eyes. Upper respiratory tract irritation.  
**Potential environmental effects** Ecological injuries are not known or expected under normal use.

## 3. Composition / Information on Ingredients

Components	CAS #	Percent
Sodium chloride	7647-14-5	91 - 92
Sodium bicarbonate	144-55-8	8 - 9

## 4. First Aid Measures

**First aid procedures**  
**Inhalation** If dust from the material is inhaled, remove the affected person immediately to fresh air. Call a physician if symptoms develop or persist.  
**Skin contact** Rinse skin with water/shower. Get medical attention if irritation develops and persists.  
**Eye contact** Rinse with water. Get medical attention if irritation develops and persists.  
**Ingestion** Rinse mouth. If ingestion of a large amount does occur, call a poison control center immediately.  
**General advice** If you feel unwell, seek medical advice (show the label where possible). Show this safety data sheet to the doctor in attendance.

## 5. Fire Fighting Measures

**Flammable properties** Not flammable by WHMIS criteria.  
**Extinguishing media**  
**Suitable extinguishing media** Water fog. Foam. Dry chemical powder. Carbon dioxide (CO<sub>2</sub>).

<b>Unsuitable extinguishing media</b>	Do not use water jet as an extinguisher, as this will spread the fire.
<b>Protection of firefighters</b>	
<b>Specific hazards arising from the chemical</b>	During fire, gases hazardous to health may be formed.
<b>Protective equipment for firefighters</b>	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
<b>Fire fighting equipment/instructions</b>	Move containers from fire area if you can do so without risk.
<b>Specific methods</b>	Use standard firefighting procedures and consider the hazards of other involved materials.
<b>Explosion data</b>	
<b>Sensitivity to static discharge</b>	Not sensitive.
<b>Sensitivity to mechanical impact</b>	Not sensitive.
<b>Hazardous combustion products</b>	None known.

## 6. Accidental Release Measures

<b>Personal precautions</b>	Keep unnecessary personnel away. Avoid inhalation of dust from the spilled material. Ensure adequate ventilation. In case of inadequate ventilation, use respiratory protection. For personal protection, see section 8 of the MSDS.
<b>Environmental precautions</b>	Do not contaminate water.
<b>Methods for containment</b>	If sweeping of a contaminated area is necessary use a dust suppressant agent which does not react with the product.
<b>Methods for cleaning up</b>	Minimize dust generation and accumulation. Should not be released into the environment. This product is miscible in water. Collect dust using a vacuum cleaner equipped with HEPA filter. Following product recovery, flush area with water. For waste disposal, see section 13 of the MSDS.

## 7. Handling and Storage

<b>Handling</b>	Provide appropriate exhaust ventilation at places where dust is formed. Minimize dust generation and accumulation. Avoid breathing dust. Avoid contact with eyes. Avoid release to the environment. Practice good housekeeping.
<b>Storage</b>	Store in original tightly closed container. Store in a well-ventilated place. Store away from incompatible materials (see Section 10 of the MSDS).

## 8. Exposure Controls / Personal Protection

<b>Occupational exposure limits</b>	No exposure limits noted for ingredient(s).
<b>Engineering controls</b>	Ventilation should be sufficient to effectively remove and prevent buildup of any dusts or fumes that may be generated during handling or thermal processing.
<b>Personal protective equipment</b>	
<b>Eye / face protection</b>	Use tight fitting goggles if dust is generated.
<b>Skin protection</b>	Wear suitable protective clothing. Wear protective gloves.
<b>Respiratory protection</b>	In case of inadequate ventilation or risk of inhalation of dust, use a suitable NIOSH approved respirator with an appropriate particulate filter.

## 9. Physical & Chemical Properties

<b>Appearance</b>	
<b>Physical state</b>	Solid.
<b>Form</b>	Powder.
<b>Color</b>	White.
<b>Odor</b>	None.
<b>Odor threshold</b>	Not available.
<b>pH</b>	Neutral
<b>Vapor pressure</b>	Not available.
<b>Vapor density</b>	Not available.
<b>Boiling point</b>	Not available.

<b>Melting point/Freezing point</b>	Not available.
<b>Solubility (water)</b>	Infinitely soluble in water
<b>Specific gravity</b>	Not available.
<b>Flash point</b>	None
<b>Flammability limits in air, upper, % by volume</b>	Not available.
<b>Flammability limits in air, lower, % by volume</b>	Not available.
<b>Auto-ignition temperature</b>	Not available.
<b>Evaporation rate</b>	Not available.
<b>Partition coefficient (n-octanol/water)</b>	Not available.

## 10. Chemical Stability & Reactivity Information

<b>Reactivity</b>	The product is stable and non-reactive under normal conditions of use, storage and transport.
<b>Chemical stability</b>	Material is stable under normal conditions.
<b>Conditions to avoid</b>	Contact with incompatible materials. Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air).
<b>Incompatible materials</b>	Strong oxidizing agents.
<b>Hazardous decomposition products</b>	No hazardous decomposition products are known.
<b>Possibility of hazardous reactions</b>	No dangerous reaction known under conditions of normal use.

## 11. Toxicological Information

### Toxicological data

Components	Species	Test Results
Sodium bicarbonate (CAS 144-55-8)		
<b>Acute</b>		
<i>Oral</i>		
LD50	Rat	> 4000 mg/kg
Sodium chloride (CAS 7647-14-5)		
<b>Acute</b>		
<i>Dermal</i>		
LD50	Rabbit	> 10000 mg/kg
<i>Inhalation</i>		
LC50	Rat	> 42 mg/l, 1 Hours
<i>Oral</i>		
LD50	Rat	3550 mg/kg

\* Estimates for product may be based on additional component data not shown.

<b>Acute effects</b>	Not expected to be acutely toxic.
<b>Sensitization</b>	Not a skin or respiratory sensitizer.
<b>Local effects</b>	Inhalation of dusts may cause respiratory irritation.
<b>Chronic effects</b>	Not expected to be hazardous by WHMIS criteria.
<b>Carcinogenicity</b>	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.
<b>Skin corrosion/irritation</b>	Prolonged skin contact may cause temporary irritation.
<b>Serious eye damage/irritation</b>	Dust in the eyes will cause irritation.
<b>Mutagenicity</b>	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
<b>Reproductive effects</b>	This product is not expected to cause reproductive or developmental effects.
<b>Teratogenicity</b>	Not available.
<b>Symptoms and target organs</b>	Dust may cause eye, skin and respiratory tract irritation.

**Synergistic materials** Not available.

## 12. Ecological Information

### Ecotoxicological data

Components		Species	Test Results
Sodium bicarbonate (CAS 144-55-8)			
<b>Aquatic</b>			
Crustacea	EC50	Daphnia	2350 mg/l, 48 hours
Fish	LC50	Bluegill ( <i>Lepomis macrochirus</i> )	8600 mg/l, 96 hours
Sodium chloride (CAS 7647-14-5)			
<b>Aquatic</b>			
Crustacea	EC50	Water flea ( <i>Daphnia magna</i> )	340.7 - 469.2 mg/l, 48 hours

**Ecotoxicity** The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

**Environmental effects** Not available.

**Aquatic toxicity** Not classified.

**Persistence and degradability** No data is available on the degradability of this product.

**Mobility in environmental media** The product is soluble in water.

## 13. Disposal Considerations

**Disposal instructions** Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Do not allow this material to drain into sewers/water supplies. Dispose in accordance with all applicable regulations.

**Waste from residues / unused products** Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

**Contaminated packaging** Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

## 14. Transport Information

### TDG

Not regulated as dangerous goods.

### IATA

Not regulated as dangerous goods.

### IMDG

Not regulated as dangerous goods.

## 15. Regulatory Information

**Canadian regulations** This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

**WHMIS status** Non-controlled

### International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes

<b>Country(s) or region</b>	<b>Inventory name</b>	<b>On inventory (yes/no)*</b>
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

\*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

## 16. Other Information

### HMIS® ratings

Health: 1  
 Flammability: 0  
 Physical hazard: 0

### NFPA ratings

Health: 1  
 Flammability: 0  
 Instability: 0

### Disclaimer

YSI, a Xylem brand cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available.

### Prepared by

Not available.